MARSHALL STAR

Serving the Marshall Space Flight Center Community

Sept. 30, 2004

Gravity Probe B enters science phase

By Lori Johnston

Gravity Probe B, a NASA spacecraft to test two predictions of Albert Einstein's general theory of relativity, recently achieved a major milestone with the completion of the Initialization and Orbit Calibration phase of its mission and the transition into the science phase. The Gravity Probe B mission is now one step closer to shedding new light on the fundamental properties of our universe.

"This is the moment we have been waiting for," said Francis Everitt, GP-B science principal investigator at Stanford University. "It represents a magnificent effort by the entire Stanford-NASA-Lockheed Martin team."

The spacecraft was launched on April 20, 2004, from Vandenberg Air Force

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Photo by David Higginbotham, Marshall Center

Newly named Robert 'Bud' Cramer Research Hall

U.S. Rep. Bud Cramer of Huntsville, in foreground, speaks Tuesday at the formal dedication of the headquarters building for the National Space Science and Technology Center, named in his honor. From left, U.S. Sen. Richard Shelby; John Gordon, meteorologist in charge of the National Weather Service; and Huntsville Mayor Loretta Spencer, look on. Cramer was instrumental in securing $17 million in federal funding to help establish the center. The National Space Science and Technology Center, at the University of Alabama in Huntsville, was created in 1999 by NASA and Alabama's research universities through the Space Science and Technology Alliance.

Photo by Emmett Given, Marshall Center

Craig Seabrook speaks Monday at the Marshall Association luncheon about his goals for the newly created Business Development Office.

Craig Seabrook heads new development office

By Sanda Martel

Craig Seabrook has been named Business Development Director at NASA's Marshall Center, overseeing new business initiatives.

Seabrook is among a group of new managers named by Marshall Center Director David King to lead new organizations created in a recent realignment — a transformation intended to position Marshall's implementation of NASA's space exploration mission.

"Craig is a great asset to our organization," said King. "His business knowledge and experience will benefit Marshall as we align the Center to carry out the Vision for Space Exploration." The Vision calls for Space Shuttles to return to safe flight to

*See **Seabrook** on page 2*

Cheers and cool jazz for CFC kick-off celebration

Tommy Thompson, left, and Walter Robinson of the jazz band Abstract entertain the Marshall Center team members who gathered in Morris Auditorium Tuesday to hear about this year's Combined Federal Campaign, its goal of $550,000 and how the community benefits from the donations. In the right photo, Bob Jones High School cheerleader Alison Coleman, left, and the rest of the squad rev up the crowd with a special CFC cheer.

Photos by David Higginbotham, Marshall Center

'Star' Gazing

From the Marshall History and Archives Files

Forty years ago today, on Sept. 30, 1964, mainstream news outlets were still reporting the release three days earlier of the Warren Commission Report on the assassination of President John F. Kennedy. The report, later widely disputed, concluded that Lee Harvey Oswald was the lone triggerman in Kennedy's Nov. 22, 1963, shooting death in Dallas.

The Marshall Star reported that week that a notebook-sized "Flight Kit Assembly" had been developed for the Apollo Command Module. The "kit" contained a microfilm projector allowing an astronaut to access any one of 12,000 pages of documents and manuals in about 15 seconds for display on a 5-inch screen.

The Marshall Star also reported that Eugene F. Kranz, Glynn S. Lunney and John D. Hodge had been named flight directors at the Manned Spacecraft Center in Houston – later renamed the Johnson Space Center.

Seabrook

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Dr. Frank Six, manager of the Space Science Research Center, left, and Craig Seabrook, Marshall's new business development director, talk at the Marshall Association luncheon.

complete the International Space Station and human and robotic exploration of the Solar System.

Seabrook will be responsible for leading the Marshall Center's new business development program and providing leadership in the formulation of business strategies and business acquisitions. He also will provide guidance and input on Marshall's funding priorities, track business opportunities and develop teaming arrangements with other government agencies, industry and academic partners.

"This is an exciting time to be part of NASA, and I look forward to being a part of the Marshall team," Seabrook said. "One of the goals of the Business Development Office is to bring new work and jobs to North Alabama, and to strengthen the capabilities of the Marshall Center and our Redstone Arsenal team."

Seabrook has 18 years of industry experience in engineering, management and business development. He worked 10 years as a payload developer and systems engineer, and for the past eight years, in management and business development at Teledyne Brown Engineering of Huntsville.

A native of Moulton, Ala., Seabrook graduated from Lawrence County High School in Moulton. He earned a bachelor's degree in metallurgical engineering from the University of Alabama in Tuscaloosa in 1986.

He is a member of the National Space Club and the American Institute of Aeronautics and Astronautics.

The writer, an ASRI employee, supports the Media Relations Department.

Snoopy honors for Marshall team

Marshall Center Deputy Director Rex Geveden, right, teases Dr. Michael Foale, International Space Station Commander and Science Officer, about spending more than 2 percent of his life in space. Foale presented International Space Station mission highlights to a full house in Morris Auditorium on Wednesday. He also presented 15 Snoopy Awards during his visit to team members who demonstrated outstanding dedication to the U.S. space program.

Foale, International Expedition 8 commander, center, presents Snoopy Awards to Icle Blankenship of ED02, left, and Mary Spaulding of DE01.

Astronaut Foale and the Snoopy receipients are all smiles. From left, Lisa Luna of ED01, Foale, Darrell Davis of ED25 and Robert J. Wingate of ED22.

Snoopy receipients show off their awards. From left, Isaias Torres of ED21, Expedition 8 Commander Foale, James Hawkins of ED22 and Emanuel Walker of ED23.

Foale, center, joins Snoopy award winners. From left, Greg Jerman of ED33, Matt Lansing of ED34, Carolyn Russell of ED33 and Sam Russell of ED32.

From left, Jeff Ratley of ED12, astronaut Foale, Danny Garcia of ED41 and William J. Cooke of UNITeS/Morgan Research.

Gravity Probe B

Continued from page 1

Base, Calif., aboard a Boeing Delta II expendable launch vehicle. For the past five months, it has been orbiting 400 miles above Earth, completing system checkouts and fine-tuning one of the most sophisticated science instruments ever put in orbit. Last month the spacecraft began science data collection.

"It's been a long, amazing road to get to this point," said Rex Geveden, deputy director of the Marshall Center. "When Gravity Probe B was first proposed more than 40 years ago, the technology required for this experiment did not yet exist. At least nine new technologies had to be invented and perfected, with the program's advances only possible through breakthroughs in cryogenics, drag-free satellite technology, and new manufacturing and measuring technologies."

The spacecraft uses four ultra-precise gyroscopes to test two extraordinary predictions of Einstein's 1916 theory that space and time are distorted by the presence of massive objects. Specifically, it is testing two effects: the geodetic effect—the amount by which the Earth warps local spacetime in which it resides, and the frame-dragging effect—the amount by which the rotating Earth drags local spacetime around with it.

"It's great to be in our science mode," said Gaylord Green, GP-B program manager at Stanford University. "The team is ecstatic that the demanding IOC phase is over and the science phase has begun. Most importantly, all systems are meeting or exceeding the requirements of the mission."

The science phase is the heart of the mission. During this phase, at least twice a day, data is relayed from Earth-based ground stations or NASA's data relay satellites to the Gravity Probe B Mission Operations Center at Stanford University in Stanford, Calif.

This data includes space vehicle and instrument performance information, as well as the very precise measurements of the gyroscopes' spin-axis alignment relative to its guide star, IM Pegasi.

Over the course of a year, the anticipated spin axis drift for the geodetic effect is a minuscule angle of 6,614.4 milliarcseconds, and the anticipated spin axis drift for the frame-dragging effect is even smaller, only 40.9 milliarcseconds. This angle is so small that if someone were to climb a slope of 40.9 milliarcseconds for 100 miles, he would rise only one inch in altitude, measured to an accuracy of better than 1/100th of an inch.

The writer, an ASRI employee, supports the Media Relations Department.

Job Announcements

MS04D0191, AST, Aerospace Materials, GS-13, Engineering Directorate, Materials, Processes & Manufacturing Department. Closes: Oct. 8. Contact: Debbie Longeddy, 544-2308

MS04D0192, AST, Aerospace Flight Systems, GS-13, Engineering Directorate, Engineering Systems Department. Closes: Oct. 4. Contact: Dana Blaine, 544-7514

MS04D0193, AST, Aerospace Materials, GS-13, Engineering Directorate, Materials, Processes & Manufacturing Department. Closes: Oct. 8. Contact: Debbie Longeddy, 544-2308

Photo by Terry Leibold/Marshall Center

100,000 man hours without accident

Dennis Davis, Industrial Safety Engineering Team leader, right, congratulates Locke McKnight, owner of GSC Construction, for completing 100,000 man hours of work without an accident that resulted in a lost day while constructing Bldg. 4600, the new Engineering office building at the corner of Martin and Rideout roads. Gerald Strickland, left, Marshall project manager for the construction, looks on.

Return to Flight update

Workers at Michoud Assembly Facility in New Orleans have transferred External Tank 120 — the Space Shuttle External Tank slated for the launch of the orbiter Discovery next spring — into the facility's vehicle assembly building. The tank is erected vertically so that foam insulation can be applied on the liquid hydrogen tank-to-intertank flange area, a tank structural connection point. The foam will be applied with an enhanced finishing procedure that requires two technicians, a new mold-injection procedure to the intertank's ribbing and real-time videotaped surveillance of the process. The foam was removed from all existing tanks when the intertank area was identified as a potential debris-shedding source following the loss of the Space Shuttle Columbia and her crew on Feb. 1, 2003. The move — a major step toward returning the Space Shuttle to flight — brings the tank one step closer to its eventual transfer to the Kennedy Space Center in Florida.

Announcements

Hispanic Heritage Month events include community festival

The Sixth Annual Hispanic Community Festival is Saturday from noon to 7 p.m. at the Roundhouse Depot in downtown Huntsville. Marshall Center team members are encouraged to attend in honor of Hispanic Heritage Month which is celebrated from Sept. 15 to Oct. 15. Marshall Center events include an art show in the lobby of Bldg. 4203 and the annual Hispanic Youth Conference and luncheon. Mexican artist Tomas Gondi will display his work from Oct. 1 -15. Also on Oct. 15, Project Mi Futuro will present the Hispanic Youth Conference aimed at motivating and inspiring Alabama's Hispanic high school students to continue their education and attend college. For more information, call Jose Matienzo at 544-1545.

Nobel Laureate to speak at Alabama A&M University Oct. 8

Dr. Herbert Kroemer, a 2000 physics Nobel prize winner, will speak at the Seventh Annual Putcha Venkateswarlu Memorial Lecture at 3 p.m., Oct. 8 in the Drake Learning Resource Center at Alabama A&M University. Kroemer's topic is "Semiconducor Heterostructures: From Physics to Devices and Back." For more information, call Glenda Edwards at 372-8138.

Marshall-sponsored reliability meeting will be Oct. 4-6

The fall meeting of the Society of Mobility Engineers -- Reliability, Maintainability, Supportability and Logistics Division -- and Probabilistic Methods Committee is Oct. 4-6 at the Huntsville Hilton. The meeting will provide industry, government and academia a forum to review RMSL technologies, reliability-based design methods, software reliability, and more. Rex Geveden, Marshall Center deputy director, will speak. For more information or to register, go to https://shop.sae.org/misc/regforms/g-11.shtml

Political activities restricted for federal employees on, off duty

Federal employees are reminded that the Hatch Act restricts political activities both at home and in the workplace. Political activities are described as activities directed at the success or failure of a candidate or a political party. Federal workers cannot engage in political activities while in a government office or vehicle, wear clothing or buttons promoting a candidate or political party, or place posters or political cartoons on office walls. The government computer is also off-limits for such activities. For questions regarding the Hatch Act, go to www.osc.gov or contact the Marshall Center Human Resources Department. See the complete policy on "Inside Marshall."

Festival goers may sign up for Saturn V license tags

Those attending the Marshall Family Fun Day and Fall Festival Saturday may also sign up to purchase a Saturn V license plate. The Madison County Licensing Office will have staff available at the event from 11 a.m. to 1 p.m. to take tag requests. Those wanting to purchase a tag should bring a tag receipt and a $50 check to receive a commitment to purchase form which may be redeemed up to a year after the tag becomes available. Of the $50 fee, $41.25 goes to the restoration of the Saturn V rocket, which is displayed at the U.S. Space & Rocket Center.

Applications for Mike Mansfield Fellowship now available

Applications are now being accepted for the Mike Mansfield Fellowship. The fellowship is a two-year program where fellows spend a year working full-time in a Japanese government office and a year of full-time language and training in the United States. These fellowships were created by the U.S. Congress to build corps of federal employees who can manage the U.S.-Japan relationship more effectively. For more information, call Vanessa Suggs at 544-7527 by Dec. 31.

Video conference on fellowship program is Oct. 8

The NASA Administrator's Fellowship Program will conduct a NASA-wide video conference for those interested in learning more about the competitive program from 9 a.m. to noon on Oct. 8, Bldg. 4200, Room 106. Register online at http://www.regonline.com/16924. For more information, call Chanel Leslie at 544-3740.

MARS Tennis Club Hi-Lo Tournament is Oct. 9

The Mars Tennis Club will hold a Hi-Lo Doubles Tournament at 8:30 a.m. on Oct. 9. Players will be matched with a doubles partner at the tournament. This tournament is for MARS members only. For more information, call Ronda Moyers at 544-6809.

2004 Marshall Center equipment inventory begins Oct. 4

An inventory of items bearing a NASA Equipment Management System barcode tag begins Oct. 4. The inventory will be conducted by EG&G and UNITeS contract employees. All items with the NASA barcode should be made available for scanning by the inventory teams. For more information, call Meta Latham at 544-4975.

Procurement office retirees to meet Oct. 5

The Procurement Office retirees will meet at 9 a.m. Oct. 5 at Mullins Restaurant on Andrew Jackson Way. For more information, call Carl Melton at 837-5604.

Professional Development Seminar is Oct. 14 at Holiday Inn

The Huntsville Madison County Chapter of Blacks in Government will hold its annual Professional Development Seminar from 8 a.m. to 4 p.m. on Oct. 14 at the Holiday Inn Research Park in Huntsville. Registration fee is $125. Speakers include James J. Braxton Sr., Ret. Col. James Paige, Donna Davis and Venita King. For more information, call C. Kelly Brinson at 876-1888.

Classified Ads

MISCELLANEOUS

TV cabinet, 2-doors, 3 shelves, holds up to 26" TV. 536-0427

Dresser, $175; exercise bike, $60; bar stools, $25; wood table, $25; wood desk, $25. 256-534-0939

Toys, books, clothes (boy's 18M to 2T); training & booster seat; all $55. 829-1062

Solid Kincaid Cherry 3-piece entertainment center, 6'Hx8'W, $1,200. 828-0756

iMac, 800MHz, 756mb, 60gb UltraATA SuperDrive, NVIDIA GeForce2MX, FireWire, USB, modem, Ethernet, airport, $900. 931-455-0898

Tuxedo sofa, cranberry & green stripe, $300. 883-1009

Coleman 5000w electric generator w/8hp Briggs engine, used 2 months, $450. 682-2043

Two vaults, Valhalla Memory Gardens, side-by-side, eye level, include all related charges, $5,500. 1-860-657-1618

Gibson RB3 5-string banjo, mint condition, $2,000. 931-273-9612

Bear Whitetail II bow w/case, sights, arrows, $160; Rare Bach Stradivarius trumpet, mint, $1,200. 851-8085

One ticket to BTL's "42nd Street," Sunday, Oct. 17, 2 p.m., Row H, $45. 881-0755

Queen mattress set, $300 firm; brown leather rocker recliner, king-size, photos available, $300 firm. 489-9604

Briggs & Stratton lawn tractor engine, 18hp, I/C, vertical shaft, no smoke, $125. 683-9364

Yellow Lab puppies, dew claws clipped, wormed, first shots, $100 each. 776-2841/Greg

Kenmore heavy duty washer/dryer, 8 years old, $200. 337-9395

Huffy bike, 20", $60; Raleigh women's bike, $125; Pine desk w/attic twin bunk bed, $400. 971-9710

Cable, 100 amp, 70', $50. 864-2629

Oak roll-top desk w/3drawers attached on side and drop-in file organizer, $450. 539-5995

Pack & Play with bassinet insert, $60. 256-776-4458 after 5 p.m.

Kenmore Heavy Duty washing machine, Almond color, $100. 883-4276

Children's clothes, mostly fall/winter, 3mos.-4T, sized and on hangers. 722-0286

Drop-leaf solid Cherry dining room table, four chairs, extension leaf, table pad, $500. 031-433-2426

Office trailer, 8x20, concrete steps w/rail, used for business, can be towed w/full-sized truck, $2,999. 256-739-9467

Yellow gold diamond ring totaling 1/2-carat, $200. 256-852-9177

Solid walnut dining room set: table, 68"x42", six chairs, two 18" removable leaves, $225. 652-0462

Shop air compressor, Cambell-Hausfield, 60 gal., new, never installed, $550. 256-232-0434

Two orchestra seat tickets, "42nd Street", VBCC, Oct. 15, $89. 881-4335

Braumuller piano, pre to early 1900's, player conversion, $5,400. 256-739-9467

Two female Guinea pigs w/cage and all accessories, $60. 464-3135

Pine entertainment center, $125. 837-4246/lv. msg.

Whitewash china/curio cabinet, $225; round glass top table w/white base, $90. 426-8001/Joe

Two passenger children's battery powered jeep, $65. 256-723-4933

1994-2001 SWB Dodge full-sized Century Deluxe Fiberglass camper shell w/multi-windows, $650. 534-4378

Antique settee, four chairs w/footstool. 1850's Mallard or copy. Antique Monthly appraisal. $1800. 881-3703

VEHICLES

1989 Ford Taurus, needs work, $600. 256-828-5246

1993 Ford Taurus, 313k miles, black, runs, $500. 722-0893 after 5 p.m.

2003 Honda 450 Foreman-"S", 4x4, yellow, brush guards, 60 hrs., wrapped racks, garaged, $5,000. 256-572-3574

1999 Suzuki Intruder 1500LC, dressed, new tires, garage kept, adult ridden, $6,500. 256-725-2683

1987 Mercedes 300E, black, 4-door, 250k miles, $3,500. 508-3387

1990 Mercury Cougar, 69.8 actual miles, second owner, air, cruise, all-power, $3,500. 931-993-7768

1996 Honda XR100 dirt bike, one-owner, $1,200. 655-6293

2000 Miata, white, black top, a/c, 30k miles, am/fm cd/cassette, Edmunds TMV, $10,789. 881-8130

1981 Chevrolet C10 pickup, 6-cyl, auto, LWB, many new parts, $1,100. 256-230-9644

1979 Ford Pinto Squire wagon, 22k miles; spice Jeep Wrangler, hardtop, no doors. 256-729-9445

1996 Ford Explorer Sport, white/gray interior, 153k miles, $3,000. 508-9985

1993 Ford Ranger XLT, ext. cab, v6, 5-speed, a/c, cruise, $2,200. 325-6000

2000 Chevrolet Silverado, 69k miles. 828-3181

1999 Chrysler Town & Country Limited, white, one-owner, loaded, 99k miles, $9,000. 828-2462

2003 GMC Sonoma extended cab, warranty, $12,500; 1998 Lincoln Continental, low miles, $7,800. 837-1774

1998 Mitsubishi Montero, 4wd, leather, third row seats, 92k miles, $8,900. 350-6477

1993 Yamaha FZR600, 21k miles, $2,500. 828-8630

1973 Chevrolet Corvette 350, auto, ps/pb, air, TT, matching NOS, white w/black leather, $11,000. 256-964-5312

2001 Ford Explorer, $9,500. 233-6197

1978 Apache Ranger, pop-up camper, wall panel type, refrigerator, stove, furnace, sleeps 6, $1,750. 256-878-5262

1992 Chevy S10, standard cab, LWB/LB, 4.3L, auto, trailer pkg., gem top, 110k miles, $2,400. 337-4342

1992 Manata Ray boat, 20', $4,000 or will trade for a 4-wheeler. 259-5140

2002 Honda Shadow ACE, 750cc, silver/purple, 6k miles, $4,500; 1998 Polaris Xpress ATV, $1,800. 881-9753

1984 Challenger fish & ski boat, 18', Evinrude motor and trailer, trolling motor, $2,500. 256-776-2687

1993 Chevy Tahoe Blazer, gray, auto, cruise, ac/pw/pl, 104k miles, $2,800. 520-2802/Ron

1997 Saturn SL, 4-cyl., 5-speed, 90k miles, 4-door, 40mpg on highway, $2,975 firm. 256-572-1867

1998 Toyota Sienna XLE, 152k miles, 6-cyl., one-owner, $9,200. 457-3355

1980 Z28 Camaro, 350 motor, T-tops, automatic, gold, $2,000. 503-2418

2001 Honda Odyssey LX, 68k miles, $15,500. 256-658-2741

WANTED

Lionel train sets, "0" gauge, tracks, landscape, etc., no broken or worn out equipment. 931-363-8217

Printer, old HP LaserJet II or III for parts. 883-2757

Hardy Boys VHS tapes from 1970s TV series. 533-5942

Used piccolo. 961-0368

FREE

Lab/Lab mix puppies, 6-weeks old. David/723-8227 after 5:30 p.m.

Kittens, long hair, born 7/31, 2 male orange tabbies, male & female, smokey. 461-0497

To good home, rescued puppies, 8 wks. old, Chow mix, 2-males - blonde, 1-female -black. 256-753-6629

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